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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/506,204	02/16/00	DOAN	T 3025.1US (95)

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EXAMINER

QUACH, T

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 11/09/00

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

09/506,204

Applicant(s)

Doan

Examiner

Quach, T.

Group Art Unit

2814



☐ Responsive to communication(s) filed on \_\_\_\_\_.

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-44 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-44 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2 & 3

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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### DETAILED ACTION

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dixit et al. or Saran et al. taken with Kobayashi et al.

Either Dixit et al. (IEDM 94) or Saran et al. show the aluminum contact in contact holes in an insulating layer. See Dixit et al. Fig. 1, page 105, right column, page 106, Saran et al., Figs. 1B and 2B, column 2 line 2 to column 3 line 3 line 20. Note that for product-by-process claims, it is the patentability of the product claims which must be determined. Thus either Dixit et al. or Saran et al. thus lack the recitation of the advantages of inclusion of alloy, the recitation of homogeneous alloy, and the various alloying elements.

Kobayashi et al. teach the use of electrode containing Al as the primary component and the inclusion of additional component wherein formation of homogeneous Al alloy, e.g., Cu, Mg, Zn, Ag, Ni, is also taught. The advantage of improved heat resistance and prevention of metal diffusion into the semiconductor material are also delineated. See column 1 lines 10 to column 3 line 3 line 42, column 4 lines 31-63.

It would have been obvious to one skilled in the art at the time the invention was made in practicing the Dixit et al. invention to have included in the aluminum material a desired alloy as

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taught by Kobayashi et al. wherein homogenous aluminum alloy can be obtained and wherein aluminum alloy having improved heat resistance and reduced diffusion can be obtained. Any alternative alloy materials not recited otherwise would have been obvious or alternatively official notice is taken to obtain the desired alloy having improved heat resistance and reduced diffusion given the teachings of the references as delineated.


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Givens et al. teach metal fill of interest.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Quach whose telephone number is (703) 308-1096. The examiner can normally be reached on Monday through Friday from 8:30 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri, can be reached on (703) 306-2794. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722 or (703) 308-7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

  
Tuan Quach  
Primary Examiner